

ABSTRACT

This invention relates to an efficient surface processing method.

In one embodiment of the invention, a laminated body 4 comprising a sample material 1, an intermediate layer 2 formed on a surface of the sample material 1, and an SOG layer 3 formed on the surface of the intermediate layer 2 is used. First, the surface of the SOG layer 3 is irradiated with an electron beam so as to expose part of the SOG layer. Next, exposed parts 31 of the SOG layer 3 are eliminated by etching. As a result, finely detailed unevenness can be formed at the surface of the SOG layer 3.

The depth of the exposed parts 31 can be controlled by changing the acceleration voltage of the electron beam. It is therefore possible to form three-dimensional shapes of different depths.

After forming unevenness at the surface of the SOG layer 3, the intermediate layer 2 and the sample material 1 can be eliminated in order using, for example, an oxygen ion beam. As a result, the same unevenness as at the surface of the SOG layer 3 can be formed at the surface of the sample material 1.